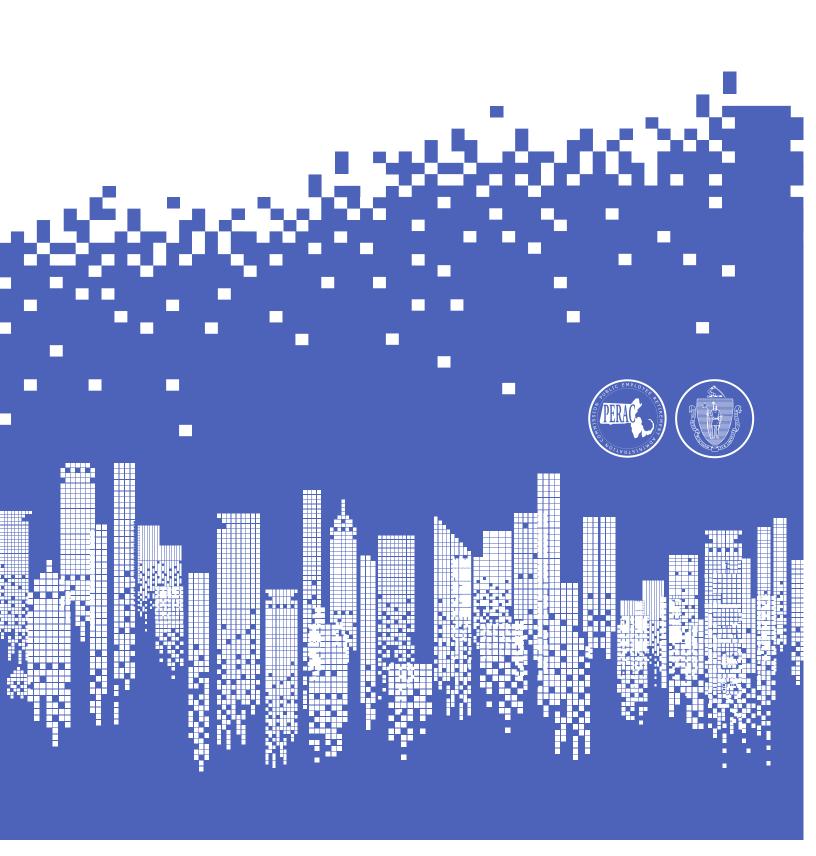
investment report 2017



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LETTER FROM THE | EXECUTIVE DIRECTOR

We are pleased to release this Investment Report for 2017. Following the adoption of Chapter 68 of the Acts of 2007, the Public Employee Retirement Administration Commission (PERAC) began issuing an Investment Report containing investment and funding results prior to the issuance of our Annual Report, which contains a more exhaustive analysis of the activities of the Massachusetts public pension systems. Chapter 68 of the Acts of 2007 mandates that systems that do not meet certain investment and funding standards transfer assets to the Pension Reserves Investment Trust Fund (PRIT) to be invested by the Pension Reserves Investment Management Board (PRIM). In light of the impact that these results may have on some systems, the Commission believes that it is imperative that this data be disseminated as soon as possible. We anticipate that the full Annual Report for 2017 will be ready for distribution in the early summer.

The two comparative components established under Chapter 68 are funded ratio and 10 year investment performance. The funded ratio standard is 65% and, based on investment performance results for 2017, the investment standard is 3.57% (PRIM 10 year return of 5.57% minus 2.00%).

PERAC, in Memo #35, 2007, outlined the principles that it would apply in conducting analysis pursuant to that law. It is suggested that Boards review those principles. Such a review is particularly important to Boards that may be subject to a Chapter 68 order this year.

This report delineates investment returns for several periods: 2017, 2013-2017 inclusive, 2008-2017 inclusive, and since inception through 2017. The funded ratios are as of the date of the most recent valuation available to PERAC. Ratios based on actuarial valuations received after April 1, 2018, have not

been included in this Report, however such valuations will be used to conduct the Chapter 68 analysis.

PERAC has completed its analysis of system funded status and investment performance in accordance with Chapter 68 of the Acts of 2007. Applying the tests set forth in that statute, PERAC has determined that no retirement board will be ordered to transfer its assets to the Pension Reserves Investment Trust Fund (PRIT) based on 2017 results.

In spite of the failure of several systems to submit accurate accounting data in a timely fashion, the PERAC Investment Unit was able to conduct an accurate assessment of the performance of most systems. In the event that such an analysis is not possible because of such failures, in the future the Commission intends to attribute to delinquent systems a return equal to that of the lowest performing system that did comply with the statutory and regulatory requirements regarding data submission.

This Report is the result of the efforts of the PERAC Investment Unit and the PERAC Compliance Unit. On behalf of the Commission, I would like to thank Senior Investment Analyst Victoria Marcorelle, Investment Analyst Veronica Colon and Compliance Analyst Cheryl Johnson for their efforts in preparing this Report.

I hope you find the Report informative and helpful as you assess the state of our retirement systems.

Sincerely,

Joseph E. Connarton Executive Director

Joseph E. Connactors

2017 RETURNS & ANNUALIZED PAST RETURNS (IN PERCENT) | FUNDED RATIOS

	Return (2017)	5-Year Return	10-Year Return	33-Year Return
ADAMS	13.96%	6.86%	4.53%	7.87%
AMESBURY	17.63%	9.85%	5.63%	8.20%
ANDOVER	17.90%	9.97%	5.66%	8.56%
ARLINGTON	16.39%	9.53%	4.90%	8.53%
ATTLEBORO	16.41%	9.88%	6.40%	9.04%
BARNSTABLE COUNTY	17.78%	9.96%	5.61%	7.71%
BELMONT	14.50%	9.55%	7.35%	9.49%
BERKSHIRE COUNTY	17.65%	9.89%	5.62%	9.18%
BEVERLY	17.78%	9.98%	5.71%	8.76%
BLUE HILLS REGIONAL	17.57%	9.87%	5.74%	8.85%
BOSTON (CITY)	17.76%	8.75%	5.97%	9.06%
BOSTON (TEACHERS)	17.46%	9.84%	NA	NA
BRAINTREE	15.97%	8.54%	6.12%	8.79%
BRISTOL COUNTY	16.83%	9.42%	6.28%	9.01%
BROCKTON	16.50%	8.22%	5.17%	8.83%
BROOKLINE	14.51%	8.69%	5.35%	8.77%
CAMBRIDGE	17.17%	10.39%	6.35%	9.45%
CHELSEA	17.85%	9.96%	5.66%	8.17%
CHICOPEE	16.16%	10.11%	7.25%	8.85%
CLINTON	17.63%	9.93%	5.18%	7.93%
CONCORD	15.20%	9.80%	6.36%	8.76%
DANVERS	16.85%	9.22%	5.84%	8.21%
DEDHAM	17.84%	10.04%	5.71%	9.68%
DUKES COUNTY	17.50%	11.08%	6.95%	8.05%
EASTHAMPTON	17.78%	9.94%	5.62%	8.47%
ESSEX REGIONAL	17.31%	10.11%	5.69%	8.92%
EVERETT	17.90%	10.06%	5.73%	8.65%
FAIRHAVEN	17.64%	9.91%	5.61%	9.46%
FALL RIVER	16.95%	9.71%	5.70%	8.54%
FALMOUTH	15.46%	10.33%	6.31%	9.16%
FITCHBURG	17.54%	9.70%	5.39%	7.84%
FRAMINGHAM	17.73%	9.92%	5.62%	9.44%
FRANKLIN REGIONAL	15.41%	10.59%	6.57%	8.57%
GARDNER	17.81%	9.94%	5.60%	9.56%
GLOUCESTER	17.75%	9.95%	5.66%	9.04%
GREATER LAWRENCE	18.32%	10.65%	7.56%	7.84%

Funded Ratio	Date of Most Recent Valuation
73.1%	1/1/16
56.6%	1/1/16
47.9%	1/1/16
51.8%	1/1/17
65.7%	1/1/16
58.2%	1/1/16
55.0%	1/1/16
82.8%	1/1/17
53.1%	1/1/16
71.5%	1/1/16
75.0%	1/1/16
39.3%	1/1/17
65.4%	1/1/17
65.7%	1/1/16
64.4%	1/1/16
55.4%	1/1/16
81.1%	1/1/16
64.3%	1/1/17
75.9%	1/1/17
65.2%	1/1/17
85.2%	1/1/17
54.9%	1/1/16
85.8%	1/1/16
72.5%	1/1/16
65.5%	1/1/16
51.9%	1/1/16
49.0%	1/1/16
69.8%	1/1/16
42.0%	1/1/17
62.5%	1/1/16
44.2%	1/1/16
68.0%	1/1/16
71.4%	1/1/16
54.6%	1/1/17
45.3%	1/1/16
88.6%	1/1/17

2017 RETURNS & ANNUALIZED PAST RETURNS (IN PERCENT) | FUNDED RATIOS

	Return (2017)	5-Year Return	10-Year Return	33-Year Return
GREENFIELD	17.77%	10.01%	5.99%	8.69%
HAMPDEN COUNTY REGIONAL	17.27%	9.78%	5.89%	8.77%
HAMPSHIRE COUNTY	16.62%	8.43%	6.05%	8.44%
HAVERHILL	16.74%	9.52%	6.06%	10.05%
HINGHAM	18.05%	9.00%	5.11%	9.26%
HOLYOKE	17.75%	11.14%	7.14%	9.58%
HULL	17.83%	9.95%	5.62%	8.12%
LAWRENCE	17.65%	9.88%	5.63%	8.00%
LEOMINSTER	18.08%	11.32%	6.42%	8.83%
LEXINGTON	19.50%	9.43%	5.04%	8.96%
LOWELL	17.27%	9.65%	5.36%	9.24%
LYNN	17.24%	9.97%	5.34%	8.21%
MALDEN	20.24%	9.21%	6.44%	9.68%
MARBLEHEAD	17.79%	9.96%	5.65%	9.39%
MARLBOROUGH	13.49%	8.18%	5.81%	8.46%
MA HOUSING FINANCE (MHFA)	14.69%	7.54%	5.19%	7.59%
MASSPORT	16.97%	9.25%	6.13%	9.15%
MA TEACHERS RETIREMENT SYSTEM (MTRS)	17.86%	10.01%	5.68%	9.62%
MA WATER RESOURCES AUTHORITY (MWRA)	15.05%	8.60%	6.54%	8.27%*
MAYNARD	17.34%	10.72%	6.14%	8.15%
MEDFORD	13.69%	7.33%	5.65%	8.84%
MELROSE	16.93%	9.41%	5.34%	8.54%
METHUEN	18.11%	10.43%	6.02%	8.22%
MIDDLESEX COUNTY	16.76%	9.42%	5.61%	8.55%
MILFORD	17.65%	9.87%	5.09%	8.40%
MILTON	17.65%	9.93%	5.67%	9.53%
MINUTEMAN REGIONAL	17.16%	9.60%	5.41%	9.59%
MONTAGUE	17.55%	9.89%	5.59%	9.29%
NATICK	16.03%	10.48%	5.70%	8.30%
NEEDHAM	17.47%	9.82%	5.54%	9.79%
NEW BEDFORD	19.29%	10.13%	6.12%	8.30%
NEWBURYPORT	17.11%	9.71%	5.50%	8.39%
NEWTON	17.38%	9.75%	5.61%	8.79%
NORFOLK COUNTY	15.83%	9.32%	5.73%	8.76%
NORTH ADAMS	20.83%	9.94%	6.90%	9.64%
NORTH ATTLEBORO	15.42%	10.56%	6.95%	8.79%

Funded Ratio	Date of Most Recent Valuation
56.0%	1/1/17
47.5%	1/1/16
58.5%	1/1/16
52.3%	1/1/16
67.9%	1/1/16
62.5%	1/1/16
58.8%	1/1/16
45.9%	1/1/16
90.1%	1/1/17
85.3%	1/1/16
56.0%	1/1/17
49.2%	1/1/17
71.3%	1/1/16
65.8%	1/1/16
76.4%	1/1/17
76.8%	1/1/17
89.6%	1/1/17
52.1%	1/1/17
96.5%	1/1/17
70.5%	1/1/17
67.3%	1/1/16
57.5%	1/1/17
50.3%	1/1/16
45.8%	1/1/16
60.9%	1/1/17
81.5%	1/1/17
88.3%	1/1/17
76.7%	1/1/16
62.2%	1/1/17
69.4%	1/1/17
46.3%	1/1/16
61.3%	1/1/16
50.9%	1/1/17
62.1%	1/1/16
75.0%	1/1/17
83.4%	1/1/17

^{*}Based on 32-year return

2017 RETURNS & ANNUALIZED PAST RETURNS (IN PERCENT) | FUNDED RATIOS

	Return (2017)	5-Year Return	10-Year Return	33-Year Return
NORTHAMPTON	21.42%	10.02%	7.01%	9.47%
NORTHBRIDGE	17.82%	9.98%	5.67%	9.51%
NORWOOD	18.91%	9.85%	7.01%	9.28%
PEABODY	17.80%	9.95%	5.65%	8.81%
PITTSFIELD	17.09%	9.76%	5.58%	8.37%
PLYMOUTH	16.95%	10.61%	6.52%	8.99%
PLYMOUTH COUNTY	17.41%	9.37%	5.74%	9.25%
PRIM BOARD	17.69%	9.89%	5.57%	9.69%
QUINCY	16.08%	8.08%	5.30%	8.31%
READING	17.60%	9.94%	5.67%	9.43%
REVERE	17.54%	9.81%	5.53%	8.56%
SALEM	17.48%	9.63%	5.17%	8.30%
SAUGUS	17.77%	9.96%	5.66%	9.38%
SHREWSBURY	17.38%	10.83%	6.59%	9.30%
SOMERVILLE	18.48%	9.85%	6.90%	9.07%
SOUTHBRIDGE	17.74%	9.84%	4.81%	8.24%
SPRINGFIELD	17.86%	10.16%	5.53%	8.58%
STATE	17.86%	10.01%	5.68%	9.61%
STONEHAM	17.22%	10.11%	5.74%	9.01%
SWAMPSCOTT	18.65%	10.36%	5.97%	9.23%
TAUNTON	16.06%	10.11%	6.71%	9.71%
WAKEFIELD	17.71%	10.00%	5.68%	9.81%
WALTHAM	15.89%	9.99%	5.70%	8.83%
WATERTOWN	16.51%	9.66%	5.78%	8.46%
WEBSTER	16.61%	9.85%	6.45%	8.31%
WELLESLEY	17.73%	9.99%	5.69%	10.09%
WEST SPRINGFIELD	20.15%	9.85%	6.25%	8.29%
WESTFIELD	17.85%	11.46%	7.36%	9.02%
WEYMOUTH	17.27%	9.73%	6.11%	9.95%
WINCHESTER	15.64%	8.58%	4.87%	9.10%
WINTHROP	17.68%	9.83%	5.53%	8.83%
WOBURN				
WORCESTER	16.84%	8.32%	5.38%	8.93%
WORCESTER REGIONAL	17.58%	9.80%	5.35%	8.36%
COMPOSITE	17.63%	9.83%	5.76%	9.36%

Funded Ratio	Date of Most Recent Valuation		
69.7%	1/1/16		
67.8%	1/1/16		
79.1%	1/1/16		
49.9%	1/1/16		
48.3%	1/1/17		
50.1%	1/1/17		
61.7%	1/1/17		
NOT APP	PLICABLE		
46.8%	1/1/16		
73.8%	1/1/17		
56.1%	1/1/17		
53.3%	1/1/16		
73.9%	1/1/17		
86.6%	1/1/17		
66.4%	1/1/17		
55.1%	1/1/16		
26.2%	1/1/16		
64.7%	1/1/17		
70.4%	1/1/16		
53.5%	1/1/17		
74.9%	1/1/16		
63.2%	1/1/16		
57.7%	1/1/17		
81.8%	1/1/17		
54.8%	1/1/16		
75.4%	1/1/17		
62.2%	1/1/16		
69.5%	1/1/17		
60.9%	1/1/16		
79.0%	1/1/17		
80.8%	1/1/17		
62.9%	1/1/16		
65.7%	1/1/17		
43.4%	1/1/16		
NOT APP	PLICABLE		

YELLOW = As of the date of this publication, the Woburn Retirement Board has not submitted data necessary to calculate an accurate investment return for 2017.

NOTES

